

## CLAIMS

- 1     1.     An apparatus comprising:
  - 2            (A) at least one processor;
  - 3            (B) a memory coupled to the at least one processor;
  - 4            (C) a shared resource coupled to the at least one processor, wherein sharing of the
  - 5            shared resource is controlled by a shared resource server; and
  - 6            (D) a resource sharing mechanism residing in the memory and executed by the at
  - 7            least one processor, the resource sharing mechanism including:
    - 8                  a first mechanism that establishes a layer two tunneling protocol (L2TP)
    - 9                  tunnel between the shared resource server and a client;
    - 10                a second mechanism that establishes an outgoing connection from the
    - 11                client through the shared resource via the L2TP tunnel using a plurality of
    - 12                messages defined by a predefined L2TP protocol for the L2TP tunnel; and
    - 13                a third mechanism that establishes an incoming connection through the
    - 14                shared resource to the client via the L2TP tunnel using a plurality of messages
    - 15                defined by user-defined extensions to the L2TP protocol for the L2TP tunnel.
- 1     2.     The apparatus of claim 1 wherein the client resides in a second logical partition on
- 2     the apparatus that is separate from a first logical partition that includes the shared
- 3     resource.
- 1     3.     The apparatus of claim 1 wherein the client comprises a computer system coupled
- 2     to the apparatus via a network connection.
- 1     4.     The apparatus of claim 1 wherein the shared resource comprises a modem.

1 5. The apparatus of claim 1 wherein the shared resource comprises a virtual private  
2 network (VPN).

1 6. The apparatus of claim 1 wherein the incoming and outgoing connections are  
2 point-to-point connections.

1 7. The apparatus of claim 1 wherein the plurality of messages defined by the user-  
2 defined extensions to the L2TP protocol comprise an accept incoming call request  
3 message and an accept incoming call reply message.

- 1 8. An apparatus comprising:  
2 (A) at least one processor;  
3 (B) a memory coupled to the at least one processor;  
4 (C) first and second logical partitions defined on the apparatus, the first logical  
5 partition including a shared resource server that controls a shared resource;  
6 (D) a resource sharing mechanism residing in the first logical partition, the  
7 resource sharing mechanism including:  
8 a first mechanism that establishes a layer two tunneling protocol (L2TP)  
9 tunnel between the shared resource server and a client that resides in the second  
10 logical partition;  
11 a second mechanism that establishes an outgoing connection from the  
12 client through the shared resource via the L2TP tunnel using a plurality of  
13 messages defined by a predefined L2TP protocol for the L2TP tunnel; and  
14 a third mechanism that establishes an incoming connection through the  
15 shared resource to the client in the second logical partition via the L2TP tunnel  
16 using a plurality of messages defined by user-defined extensions to the L2TP  
17 protocol for the L2TP tunnel.
- 1 9. The apparatus of claim 8 wherein the shared resource comprises a modem.
- 1 10. The apparatus of claim 8 wherein the shared resource comprises a virtual private  
2 network (VPN).
- 1 11. The apparatus of claim 8 wherein the incoming and outgoing connections are  
2 point-to-point connections.

1    12.    The apparatus of claim 8 wherein the plurality of messages defined by the user-  
2    defined extensions to the L2TP protocol comprise an accept incoming call request  
3    message and an accept incoming call reply message.

- 1 13. A computer-implemented method for sharing a shared resource between a  
2 resource server that controls the shared resource and a client, the method comprising the  
3 steps of:  
4 (A) establishing a layer two tunneling protocol (L2TP) tunnel between the  
5 resource server and the client;  
6 (B) establishing an outgoing connection from the client through the shared  
7 resource via the L2TP tunnel using a plurality of messages defined by a predefined L2TP  
8 protocol for the L2TP tunnel; and  
9 (C) establishing an incoming connection through the shared resource to the client  
10 via the L2TP tunnel using a plurality of messages defined by user-defined extensions to  
11 the L2TP protocol for the L2TP tunnel.
- 1 14. The method of claim 13 wherein the client resides in a second logical partition  
2 that is separate from a first logical partition that includes the shared resource.
- 1 15. The method of claim 13 wherein the client comprises a computer system coupled  
2 to the resource server via a network connection.
- 1 16. The method of claim 13 wherein the shared resource comprises a modem.
- 1 17. The method of claim 13 wherein the shared resource comprises a virtual private  
2 network (VPN).
- 1 18. The method of claim 13 wherein the incoming and outgoing connections are  
2 point-to-point connections.

- 1 19. The method of claim 13 wherein the plurality of messages defined by the user-
- 2 defined extensions to the L2TP protocol comprise an accept incoming call request
- 3 message and an accept incoming call reply message.

- 1 20. A computer-implemented method for sharing a shared resource between a  
2 resource server in a first logical partition that controls the shared resource and a client in a  
3 second logical partition, the method comprising the steps of:  
4 establishing a layer two tunneling protocol (L2TP) tunnel between the resource  
5 server and the client;  
6 establishing an outgoing connection from the client through the shared resource  
7 via the L2TP tunnel using a plurality of messages defined by a predefined L2TP protocol  
8 for the L2TP tunnel; and  
9 establishing an incoming connection through the shared resource to the client in  
10 the second logical partition via the L2TP tunnel using a plurality of messages defined by  
11 user-defined extensions to the L2TP protocol for the L2TP tunnel.
- 1 21. The method of claim 20 wherein the shared resource comprises a modem.
- 1 22. The method of claim 20 wherein the shared resource comprises a virtual private  
2 network (VPN).
- 1 23. The method of claim 20 wherein the incoming and outgoing connections are  
2 point-to-point connections.
- 1 24. The method of claim 20 wherein the plurality of messages defined by the user-  
2 defined extensions to the L2TP protocol comprise an accept incoming call request  
3 message and an accept incoming call reply message.

1 25. A program product comprising:  
2 (A) resource sharing mechanism including:  
3 a first mechanism that establishes a layer two tunneling protocol (L2TP)  
4 tunnel between a shared resource server that controls a shared resource and a  
5 client;  
6 a second mechanism that establishes an outgoing connection from the  
7 client through the shared resource via the L2TP tunnel using a plurality of  
8 messages defined by a predefined L2TP protocol for the L2TP tunnel; and  
9 a third mechanism that establishes an incoming connection through the  
10 shared resource to the client via the L2TP tunnel using a plurality of messages  
11 defined by user-defined extensions to the L2TP protocol for the L2TP tunnel; and  
12 (B) computer readable signal bearing media bearing the resource sharing  
13 mechanism.

1 26. The program product of claim 25 wherein the signal bearing media comprises  
2 recordable media.

1 27. The program product of claim 25 wherein the signal bearing media comprises  
2 transmission media.

1 28. The program product of claim 25 wherein the client resides in a second logical  
2 partition on the apparatus that is separate from a first logical partition that includes the  
3 shared resource.

1 29. The program product of claim 25 wherein the client comprises a computer system  
2 coupled to an apparatus that includes the resource sharing mechanism via a network  
3 connection.



1 30. The program product of claim 25 wherein the shared resource comprises a  
2 modem.

1 31. The program product of claim 25 wherein the shared resource comprises a virtual  
2 private network (VPN).

1 32. The program product of claim 25 wherein the incoming and outgoing connections  
2 are point-to-point connections.

1 33. The program product of claim 25 wherein the plurality of messages defined by the  
2 user-defined extensions to the L2TP protocol comprise an accept incoming call request  
3 message and an accept incoming call reply message.

1 34. A program product comprising:  
2 (A) a resource sharing mechanism residing in a first logical partition, the resource  
3 sharing mechanism including:  
4 a first mechanism that establishes a layer two tunneling protocol (L2TP)  
5 tunnel between a shared resource server in the first logical partition that controls a  
6 shared resource and a client that resides in a second logical partition;  
7 a second mechanism that establishes an outgoing connection from the  
8 client through the shared resource via the L2TP tunnel using a plurality of  
9 messages defined by a predefined L2TP protocol for the L2TP tunnel; and  
10 a third mechanism that establishes an incoming connection through the  
11 shared resource to the client via the L2TP tunnel using a plurality of messages  
12 defined by user-defined extensions to the L2TP protocol for the L2TP tunnel; and  
13 (B) computer readable signal bearing media bearing the partition manager.

1 35. The program product of claim 34 wherein the signal bearing media comprises  
2 recordable media.

1 36. The program product of claim 34 wherein the signal bearing media comprises  
2 transmission media.

1 37. The program product of claim 34 wherein the shared resource comprises a  
2 modem.

1 38. The program product of claim 34 wherein the shared resource comprises a virtual  
2 private network (VPN).

1 39. The program product of claim 34 wherein the incoming and outgoing connections  
2 are point-to-point connections.

1 40. The program product of claim 34 wherein the plurality of messages defined by the  
2 user-defined extensions to the L2TP protocol comprise an accept incoming call request  
3 message and an accept incoming call reply message.

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